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Managing anxiety in patients undergoing cataract surgery: an observational study in a Polish hospital

Zarządzanie lękiem u pacjentów poddawanych operacji zaćmy: badanie obserwacyjne w polskim szpitalu

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A – Development of the concept and methodology of the study/Opracowanie koncepcji i metodologii badań; B – Query - a review and analysis of the literature/Kwerenda – przegląd i analiza literatury przedmiotu; C – Submission of the application to the appropriate Bioethics Committee/Złożenie wniosku do właściwej Komisji Biotycznej; D – Collection of research material/Gromadzenie materiału badawczego; E – Analysis of the research material/Analiza materiału badawczego; F – Preparation of draft version of manuscript/Przygotowanie roboczej wersji artykułu; G – Critical analysis of manuscript draft version/Analiza krytyczna roboczej wersji artykułu; H – Statistical analysis of the research material/Analiza statystyczna materiału badawczego; I – Interpretation of the performed statistical analysis/Interpretacja dokonanej analizy statystycznej; K – Technical preparation of manuscript in accordance with the journal regulations/Opracowanie techniczne artykułu zgodne z regulaminem czasopisma; L – Supervision of the research and preparation of the manuscript/Nadzór nad przebiegiem badań i przygotowaniem artykułu

STRESZCZENIE

ZARZĄDZANIE LĘKIEM U PACJENTÓW PODDAWANYCH OPERACJI ZAĆMY: BADANIE OBSERWACYJNE W POLSKIM SZPITALU

Cel pracy. Lęk jest negatywną emocją, której doświadczają pacjenci w obliczu procesu chirurgicznego, co może prowadzić do powikłań pooperacyjnych, takich jak ból, nudności oraz wydłużony czas rekonwalescencji. Edukacja przedoperacyjna jest niezbędnym elementem opieki pielęgniarskiej w zarządzaniu pacjentem chirurgicznym. Niniejsze badanie opisuje częstość występowania lęku u grupy polskich pacjentów przed operacją zaćmy.

Materiał i metody. Do tej samej grupy badanej kolejno włączono 99 pacjentów. Lęk mierzono za pomocą Amsterdamskiej Skali Lęku i Informacji Przedoperacyjnej (APAIS) oraz Wizualnej Skali Analogowej Lęku (VAS-A). Przeprowadzono ścisłe monitorowanie parametrów życiowych.

Wyniki. Badaniem objęto 62% kobiet, 38% mężczyzn, z czego 78% nie miało wcześniejszych operacji, a 32% odczuwało silny lęk. Większość pacjentów poddawanych operacji zaćmy po raz pierwszy miała potrzebę uzyskania większej ilości informacji na temat procedury, szczególnie dotyczących rodzaju operacji. Ból pooperacyjny zaobserwowano u 27% badanej próby, przy czym zauważono tendencję do mniejszego bólu u pacjentów, którzy odczuwali mniejszy lęk. Wyraźnie widać, że większa ilość informacji koreluje z niższymi poziomami lęku przedoperacyjnego, a tym samym z mniejszą liczbą powikłań, takich jak ból.

Wnioski. Zwiększona ilość indywidualnych informacji w ramach planu opieki pielęgniarskiej w procesie opieki nad pacjentem zmniejsza lęk przedoperacyjny i poprawia stan bólu pooperacyjnego.

Słowa kluczowe: lęk, zaćma, edukacja, kompetencje zawodowe, pielęgniarstwo

ABSTRACT

MANAGING ANXIETY IN PATIENTS UNDERGOING CATARACT SURGERY: AN OBSERVATIONAL STUDY IN A POLISH HOSPITAL

Aim. Anxiety is a negative emotion experienced by individuals when facing a surgical process, which could lead to post-surgical complications such as pain, nausea, and prolonged recovery. Preoperative education is essential as part of nursing care in surgical management. This study describes the prevalence of anxiety in a group of Polish patients before cataract surgery.

Material and methods. Ninety-nine patients were consecutively included in the same study group. Anxiety was measured using the Amsterdam Preoperative Anxiety and Information Scale (APAIS) and the Visual Analog Scale for Anxiety (VAS-A). Strict monitoring of vital signs was conducted.

Results. A total of 62% women and 38% men participated in the study, with 78% having no previous surgeries, and 32% experiencing severe anxiety. Most patients undergoing cataract surgery for the first time had the need for more information regarding the procedure, especially regarding the type of surgery. Post-surgical pain was observed in 27% of the sample, with a tendency for less pain in those patients who had experienced lower anxiety. It is evident that greater information correlates with lower levels of preoperative anxiety and consequently fewer complications such as pain.

Conclusions. Increased individualized information as part of the nursing care plan in the patient care process reduces preoperative anxiety and improves post-surgical pain.

Key words: anxiety, education, nursing, professional competence, cataract

INTRODUCTION

Poland, with a population of approximately 38 million, is grappling with an aging population and declining birth rates, increasing pressure on its predominantly public healthcare system. One major responsibility of public authorities is ensuring equitable healthcare access, particularly addressing long waiting times for surgeries [1]. Poland ranks among the countries with the longest surgical wait times [2], prompting efforts to enhance interprofessional collaboration between primary and specialized care. Since 2016, nursing competencies have evolved, with Polish nurses gaining the authority to prescribe medications, improving care quality and autonomy [3]. In 2020, the Nursing Advice program was introduced, offering specialized care in fields such as general surgery and cardiology, further empowering nurses [4]. However, challenges persist, particularly in ophthalmology, where the specialty lacks formal recognition and training hours are minimal, leading to a shortage of specialists. The average wait time for cataract surgery in Poland is 246 days, with the number of age-related cataracts projected to reach 1.3 million by 2030 [5]. Cataract surgery was the most common procedure in Europe in 2021, with 4.32 million surgeries performed. Although France had the highest number of interventions, Poland's rate was lower, with 528 interventions per 100,000 inhabitants [6]. Given the rising number of cataract cases, implementing good clinical practices for patient management is essential. Clinical guidelines emphasize the importance of comprehensive preoperative assessments. Pre-anesthetic visits help establish a therapeutic relationship through standardized nursing interventions, such as anxiety reduction and preoperative education [7]. Proper preoperative preparation would help reduce stress levels, leading to higher patient satisfaction rates and reducing the incidence of associated complications. Literature evidences the relationship between preoperative anxiety and complications such as pain, nausea and vomiting [8].

AIM

The objective of this study is to identify the prevalence of anxiety in patients undergoing cataract surgery. Additionally, to examine the relationship between preoperative anxiety and post-surgical pain, in order to achieve a better understanding and management of anxiety levels, and improve the quality standards of nursing care in ophthalmic surgical patients.

MATERIALS AND METHODS

Ethical Considerations

The study received ethical approval from the Bioethical Committee (code KB/E/PIEL-I 2.2023) and hospital management before it began. Participation was voluntary and confidential, following ethical principles such as respect for individuals, beneficence, non-maleficence, and justice. Verbal informed consent was obtained, with the ethics committee waiving the need for written consent. Confidentiality was assured, guaranteeing equal rights and treatment for all participants. The research adhered to the World Medical Association's Declaration of Helsinki (1964) and the EU's General Data Protection Regulation (2016/679) [9], prioritizing participants' safety, rights, and well-being, and ensuring the anonymity of personal data.

Design

Cross-sectional, descriptive, observational study.

Participants

A total of 99 patients awaiting cataract surgery were consecutively selected and included in a single study group. Inclusion criteria were: voluntary acceptance to participate in the study, age over 18 years, and undergoing cataract surgery for the first time. Patients under 18 years old, with cognitive impairment and/or mental illness that hindered participation or refusal to participate voluntarily, were excluded from the study. Data collection took place in the ophthalmology department of a public hospital, between October and December 2023.

Instruments

The study utilized the Amsterdam Preoperative Anxiety and Information Scale (APAIS), developed by Moerman N. et al. [10], to measure preoperative anxiety, particularly in elderly patients who represent the majority of surgical cases. The APAIS consists of six items assessing anxiety related to anesthesia, surgery, and the need for information, with responses rated on a Likert scale from 1 (not at all) to 5 (extremely), resulting in scores ranging from 6 to 30 (Tab. 1). A score of 13 or higher indicates heightened anxiety. The APAIS has been translated into multiple languages, including Polish, for evaluating preoperative anxiety in various surgeries [11]. In addition to APAIS, the study collected sociodemographic data (age, sex, education, previous surgeries) and used the Visual Analog Scale for Anxiety (VAS-A) to measure anxiety at different time points [12]. The VAS-A, which ranges from 0 (no anxiety) to 10 (extreme anxiety), is especially helpful for older adults due to its simple format. Postoperative pain was assessed with a categorical verbal scale (no pain, mild, moderate, or severe pain), while patient satisfaction was measured on a linear scale from 0 (no satisfaction) to 10 (maximum satisfaction).

Tab. 1. Original APAIS questionnaire. Translation from English to Polish, detailing each of the items that make it up, Moerman N. et al. [10]

Translated items of APAIS	
Original items	**Polish items**
1. I am worried about the anesthetic.	1. Martwię się znieczuleniem
2. The anesthetic is on my mind continually.	2. Ciągle myślę o operacji
3. I would like to know as much as possible about the anesthetic.	3. Chciałabym wiedzieć jak najwięcej o znieczuleniu
4. I am worried about the procedure.	4. Martwię się operacją
5. The procedure is on my mind continually.	5. Cały czas myślę o operacji
6. I would like to know as much as possible about the procedure.	6. Chciałbym wiedzieć jak najwięcej o tej operacji

Note: APAIS = Amsterdam Preoperative Anxiety and Information Scale.

Procedure

To maintain consistency and replicability in the study interventions, a checklist was created based on guidelines from Hoffmann T.C. et al. [13]. Patients scheduled for cataract surgery were approached individually by nurses on the day of their procedure, where the study objectives were explained, emphasizing voluntary participation. Eligibility criteria were confirmed before proceeding. Participants were given time to complete a questionnaire that gathered sociodemographic and clinical data in a private nursing room, ensuring a calm environment for pre-surgery preparation.

Collected variables included demographic details, surgical history, and education level. Participants completed the APAIS questionnaire and the Visual Analog Scale for Anxiety (VAS-A), and their blood pressure and heart rate were recorded. All data were gathered prior to administering preanesthetic medication (Fig. 1).

Fig 1. Study flow diagram

Note: APAIS = Amsterdam Preoperative Anxiety and Information Scale; VAS-A = Visual Analogue Scale for Anxiety.

Immediately after the intervention, the patient was redirected and accommodated in the room, at which point the VAS-A scale was administered again to assess anxiety levels and postoperative pain was evaluated. Just before discharge, the patient's degree of satisfaction with all the care received was measured, from admission to discharge.

Statistical Analysis

The cohort has been described with means and standard deviations for numerical variables, and absolute frequencies and row percentages for categorical variables. The variables of the study population have been compared in anxiety and post-surgical pain yes/no groups. Student's t-test has been used to compare continuous variables, and the chi-square test has been used for categorical variables. P-values < 0.05 were considered statistically significant. All data were analyzed using R software version 4.2.2.

RESULTS

The study included a total of 99 subjects, comprising 62% women and 38% men. Educational backgrounds varied, with 38% having basic education, 49% with intermediate education, and 13% holding university degrees. Notably, 78% of the participants had no prior surgical experience, while 22% had undergone previous surgical interventions. The average age of the participants was 72.84 years, spanning from 43 to 91 years (Fig. 2). The most prevalent patient profile identified was a woman over 70 years old with intermediate education and no prior surgery experience. To assess anxiety levels, the Amsterdam Preoperative Anxiety and Information Scale (APAIS) and the Visual Analog Scale for Anxiety (VAS-A) were employed. The average APAIS score was 16.60, indicating moderate to high pre-surgical anxiety, with 68% of participants scoring 13 points or higher, qualifying them as experiencing anxiety. The Student's t-test was conducted here to compare VAS-A scores before and after surgery. The VAS-A scale showed an average anxiety level of 4.85 before surgery. However, post-surgery results revealed a significant decrease in anxiety, with an average VAS-A score of 0.86; 97% of participants reported experiencing mild or no anxiety following the operation. In the APAIS questionnaire, the highest concern among participants was the need for more information about the surgery, averaging 3.04 points, while the need for information regarding anesthesia was the lowest, averaging 2.57 points. Postoperative complications were minimal, primarily involving pain, which affected 27% of participants; 73% reported no pain, with 88% of those experiencing pain reporting it as mild and 12% as moderate.

The chi-square test compares the anxiety for pain levels, that is, anxious versus non-anxious groups to find out if preoperative anxiety is related to postoperative pain.

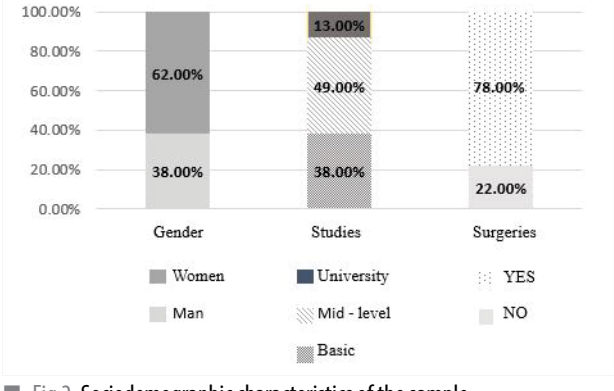

Fig 2. Sociodemographic characteristics of the sample

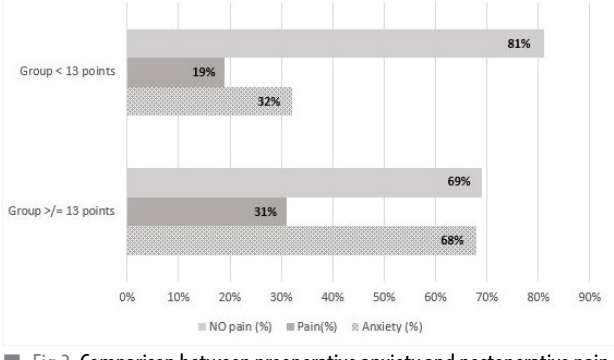

Fig 3. Comparison between preoperative anxiety and postoperative pain. Patients who scored higher on the APIS questionnaire (≥ 13 points) also experienced more pain after surgery. The graph shows the percentage of pain according to the result obtained in the APAIS.

Note: APAIS = Amsterdam Preoperative Anxiety and Information Scale.

From this analysis, a correlation was noted between preoperative anxiety and postoperative pain, with lower anxiety scores linked to less postoperative pain (Fig. 3). Additionally, vital signs indicated that participants with anxiety scores of 13 or higher experienced a 7% increase in heart rate and an 18% increase in systolic blood pressure before surgery compared to their readings after the operation (Tab. 2).

Tab. 2. Comparison of vital parameters taken before and after surgery. Systolic Blood Pressure (SBP), Diastolic Blood Pressure (DBP), and Heart Rate (HR)

Average vital signs	≥ = 13 points APAIS N=67	< 13 points APAIS N=32	Total sample N= 99
Blood Pressure before (mm/Hg):			
SBP	152.01	151.53	151.85
DBP	83.07	81.03	82.41
HR before (bpm):	75.08	71.78	74.02
Blood Pressure after (mm/Hg):			
SBP	134.27	136.5	134.96
DBP	77.87	77.56	77.78
HR after (bpm):	68.96	68.16	68.71

Note: APAIS = Amsterdam Preoperative Anxiety and Information Scale; mm/Hg= millimeters of mercury; bpm= beats per minute.

Participants' overall satisfaction with the process from admission to discharge was measured before they went home. A scale from 0 (not at all satisfied) to 10 (quite satisfied) was used, resulting in an average satisfaction score of 9.68. This data indicates that patients were, in general, very satisfied with the care they received.

DISCUSSION

The objective of this study is to identify the prevalence of anxiety in a group of Polish patients undergoing cataract surgery. Additionally, the study aims to investigate the relationship between preoperative anxiety and postoperative pain. Anxiety and fear are common experiences for many individuals undergoing surgical procedures, as demonstrated by our findings, in which 68% of the total sample experienced preoperative anxiety before cataract surgery. Among these, 62% were women and 38% were men, and 32% of patients experienced severe anxiety. This finding coincided with previous studies, such as one by Konjevoda S. et al. [14], which found that 60.5% of cataract surgery patients experienced anxiety. Similarly, Torres Watanabe J. et al. [15] used the APAIS questionnaire in a sample of 60 patients undergoing scheduled surgery, concluding that 50% of patients experienced mild anxiety, followed by 30% with moderate anxiety, and only 20% reported no anxiety. This finding was also supported by Ahmed KJ. et al. [16], who evaluated the impact of an informative video on a population undergoing cataract surgery. They observed that the intervention group, which watched the video, had a lower level of anxiety and concern. In the present study, it was found that the need for information in the majority of patients was primarily related to the surgery itself. A similar previous study carried out in Spain (unpublished data) observed the same result in a sample of patients undergoing cataract surgery, where 53% of them experienced preoperative anxiety related to the need for more information about the operation to be performed. Conversely, the item with the lowest score obtained according to the APAIS questionnaire was the need for more information about the type of anesthesia to be received. Despite these data, other studies, such as Kiran LV. et al. [17], discovered that a large proportion of patients experience anxiety due to a lack of information about what they will feel under local anesthesia. Research suggests that preoperative counselling can significantly reduce anesthesia-related anxiety.

The study underscores the importance of providing comprehensive preoperative information to reduce anxiety and post-surgical complications. While anesthesia nurse consultations are critical for assessing anesthetic risks and providing personalized information, the study unit lacked dedicated preoperative nursing roles. Instead, ophthalmologists primarily managed this process, and nursing staff provided only basic information. The results also show a correlation between preoperative anxiety and postoperative pain. Patients with higher anxiety, as measured by the APAIS, reported more pain (31%) compared to those with lower anxiety (19%). This mirrors findings from Guerrier G. et al. [18], who found that interventions such as music therapy reduced both anxiety and postoperative pain. The study also evaluated patient satisfaction with cataract surgery using a 0–10 scale, though this approach has limitations, as it does not offer detailed insights into the quality of care received. Effective pain management is crucial for enhancing patient satisfaction throughout the surgical process.

CONCLUSIONS

Our study identifies that Polish patients undergoing cataract surgery experience a high level of anxiety prior to the operation. Furthermore, most patients undergoing cataract surgery for the first time have the need for more information regarding the procedure, especially regarding the type of surgery. It is evident that greater information correlates with lower levels of preoperative anxiety and consequently fewer complications such as pain.

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